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Fostering innovation at RIT

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Fostering Innovation at RIT

Part 1: Understanding Innovation and Unique Styles of Innovation

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President Destler has established a vision and goal for RIT to become the nation's first "Innovation University." While faculty, staff and students alike are intrigued and energized by this vision, to build and sustain a culture of innovation, we must start by developing a shared language and understanding of what is innovation and how we can build a culture that fosters innovation.

Why innovation?

It is widely believed that our ability to innovate is a key factor in our global competitiveness (Devaney, 2008:1). Reports released recently by the Council on Competitiveness and the Task Force on the Future of American Innovation warn that the U.S is facing significant challenges to its leadership role in innovation. "…the United States is losing ground in several key areas, including *education*, workforce, knowledge creation, and research and development (R&D) investment" (Ouellette, 2005:423).

As the United States has moved from an industrial to a knowledge-based economy, higher education has been a major source of economic growth because education increases productive human capital. During the postwar years (1948 to 1973) it is estimated that education *and the innovation that arose from it* accounted for two-thirds of the increase in U.S. economic growth (Desrochers, nd:4). As a recent report prepared by the Vice President and Director of Education Studies for the U.S. Committee for Economic Development points out, "The prevailing view that higher education is primarily a purveyor of individual economic opportunity rather than an engine for national economic growth provides too narrow a perspective on higher education. …in a knowledge economy, higher education benefits more than just those who attend" (Desrochers, nd:5).

As educators, we are in a unique position to drive an increase in productive human capital through skill enhancement, knowledge creation and ultimately in innovation.

What is innovation?

Innovation is the design, invention, development and/or implementation of new or altered products, services, processes, systems, organizational structures, or business models for the purpose of creating new value for customers and financial return for the firm (BlessingWhite, 2007:3). It is important to focus on the phrase, *new or altered*. Innovation is not just about breakthrough inventions, it is also about incremental improvements. In fact, a study conducted recently by BlessingWhite, a global consulting firm dedicated to creating sustainable high-performance organizations, indicates that senior executives want both "large" *and* "small" innovation. Breakthrough inventions *and* incremental improvements are of equal value (BlessingWhite, 2007:3).

Innovation versus creativity

Innovation is related to creativity but is not the same thing. Creativity involves generating new ideas. Innovation involves *acting* on ideas to make some specific and tangible difference.

Types of innovative styles

All of us are capable of creativity and innovation. But, we may express our creativity differently or focus primarily on one type of innovation (breakthrough or incremental). Dr M J Kirton, who developed the Adaption-Innovation theory, characterizes these differences as being rooted in our innate thinking style. Thinking style affects our approach to creativity, problem solving, and decision making. According to the Adaption-Innovation theory, everyone can be located somewhere on a continuum, as shown in figure 1, ranging from highly *adaptive* to highly *innovative*.

Adaptor Innovator

Figure 1: Adaption-Innovation Continuum

It is important to avoid confusing Kirton's term *Innovator* with the concept of innovation. Both Adaptors and Innovators, as defined by Kirton, are capable of acting on ideas to make some specific and tangible difference. Kirton stresses that many studies have proven there is no relationship between thinking style and creative ability (Leonard, nd:1). Each style arrives at innovation very differently. Individuals towards to the Adaptor end of the continuum are more likely to drive incremental improvements, or "small" innovation. Those closer to the Innovator end of the continuum are more likely to drive breakthrough inventions, or "large" innovation.

When faced with an opportunity or a problem, the strategy that a person will use depends on her/his innate thinking style. The Adaptors tend to work within an established structure to improve it. The Innovator tends to address the situation by doing things in a fundamentally different way. For the purpose of this paper, the thinking style Kirton refers to as the Innovator will hereafter be referred to as the "Originator."

Comparing the styles

The Adaptor is characterized by conformance, prudence, honor of the tried-and-true, caution, continuity, and the desire for stability. The Originator is characterized by willingness to risk, challenging assumptions, ignoring the rules, and redefining instead of accepting problems as given (Leonard, nd:1).

Much of the Adaptor's effort in effecting change is through improving and "doing things better." Originators, on the other hand, are more likely to pursue change that reconstructs the problem, separating it from accepted thought, paradigms, and customary viewpoints, and therefore are likely to emerge with solutions that are much less expected. Originators are less concerned with "doing things better" and more with "doing things differently" (Kirton, nd:1). Additional characteristics of each style are provided in table 1.

Table 1: Behavior descriptions of Adaptors and Originators (Kirton, nd:1)

Adaptors	***Originators***
Characterized by precision, reliability, efficiency	Characterized as thinking "out of the box", approaching tasks from unsuspected angles
Seen as methodical, prudent, disciplined	Seen as undisciplined, unpredictable
Concerned with resolving problems rather than finding them	Concerned with discovering problems and less expected avenues of solution
Seeks solutions to problems in tried and understood ways	Tends to query a problem's associated assumptions; manipulates problems
Reduces problems by improvement and greater efficiency, with maximum of continuity and stability	Is a catalyst to settled groups, irreverent of their consensual views; seen as abrasive, creating dissonance
Seen as conforming, safe, dependable	Seen as ingenious; unsound, impractical
Does things better	Does things differently
Challenges rules rarely and cautiously, and only when assured of strong support and consensus	Often challenges rules, may have little respect for past custom
Tends to high self-doubt when system is challenged, reacts to criticism by closer outward conformity; Vulnerable to social pressure and authority; compliant	Appears to have low self-doubt when generating ideas, does not need consensus to maintain certainty in face of opposition
Sensitive to people, maintains group cohesion and cooperation; can be slow to overhaul a rule	Appears insensitive to people when in pursuit of solutions, so often threatens group cohesion and cooperation
Provides a safe base for the innovator's riskier operations	Provides the dynamics to bring about periodic radical change, without which institutions tend to stagnate

Those located on the Adaption-Innovation continuum's extremes are far more likely to disagree than collaborate when it comes to problem solving and decision-making.

Originators are often seen by Adaptors as abrasive and insensitive. This misunderstanding usually occurs because Originators are prone to attacks on an Adaptor's theories and assumptions, both explicitly when they feel that the Adaptor needs a push to hurry him in the right direction or to get him out of his rut, and implicitly by showing a disregard for the rules, conventions, or standards of behavior. It is interesting to note that Originators may also be seen by each other as abrasive (Kirton, nd:3).

Originators tend to see Adaptors as stuffy and not enterprising, attached to systems, rules and norms which, however useful, are too restricting for the Originator's liking (Kirton, nd:3).

Kirton's work grew out of an investigation into the ways in which ideas that led to radical changes were developed and implemented in organizations. Kirton found that "there was a marked tendency for the majority of ideas that encountered opposition and delays to have been put forward by managers who were <Originators>" (Kirton, nd:2). Disregard of convention when in pursuit of their own ideas often has the effect of isolating Originators (Kirton, nd:3).

Kirton's work notes that, while every organization has its own unique thinking style, most organizations tend to encourage bureaucracy and adaptation to minimize risk. Thus, not surprisingly, Originators have a harder time being heard and followed.

Bridging the two styles

Understanding and learning to work effectively with colleagues, regardless of thinking style, is fundamental to fostering a culture of innovation. One framework that can assist in adopting a more open attitude between thinking styles is Polarity Management. A polarity, unlike a problem that can be solved by gathering data and weighing cost/benefit, is an *interdependent* pair of opposites. Like breathing in and out, you need both sides of a polarity to maintain health. Polarity Management includes use of a tool, called a polarity map, to understand the forces at play. The concept of a polarity map was developed by Barry Johnson and is described in his book, *Polarity Management*, HRD Press, 1996.

The polarity map shown in figure 2 outlines some of the benefits of the Originator style of thinking (upper left quadrant). While every organization would gladly endeavor to realize these benefits, an organization that focuses solely on "large" innovation or fostering *only* the breakthrough style of thinking will also suffer the downside of the Originator approach (lower left quadrant).

The polarity map in figure 2 also highlights some of the benefits of the Adaptor's approach (upper right quadrant). While this quadrant may be appealing, an over-focus on accepting only incremental or "small change" will lead to the downside of the Adaptor style (lower right quadrant).

Organizations must maintain a healthy tension or balance between both approaches in order to obtain all the benefits depicted in the upper or positive half of the map. Failure to maintain this balance will lead to a repetitive cycle of reactivity. To illustrate this non-productive cycle of reactivity, consider that an organization *over-focuses* on breakthrough innovation to the complete disregard for adaptation (quadrant 1). This will cause the organization to begin to suffer the effects of quadrant 2. In reaction to experiencing the undesirable state of quadrant 2, it *over-corrects* and becomes totally focused on incremental improvements to the exclusion of breakthrough innovation (quadrant 3). An over-focus on the adaptive approach then leads to the downside of that style (quadrant 4), causing the entire cycle to begin again.

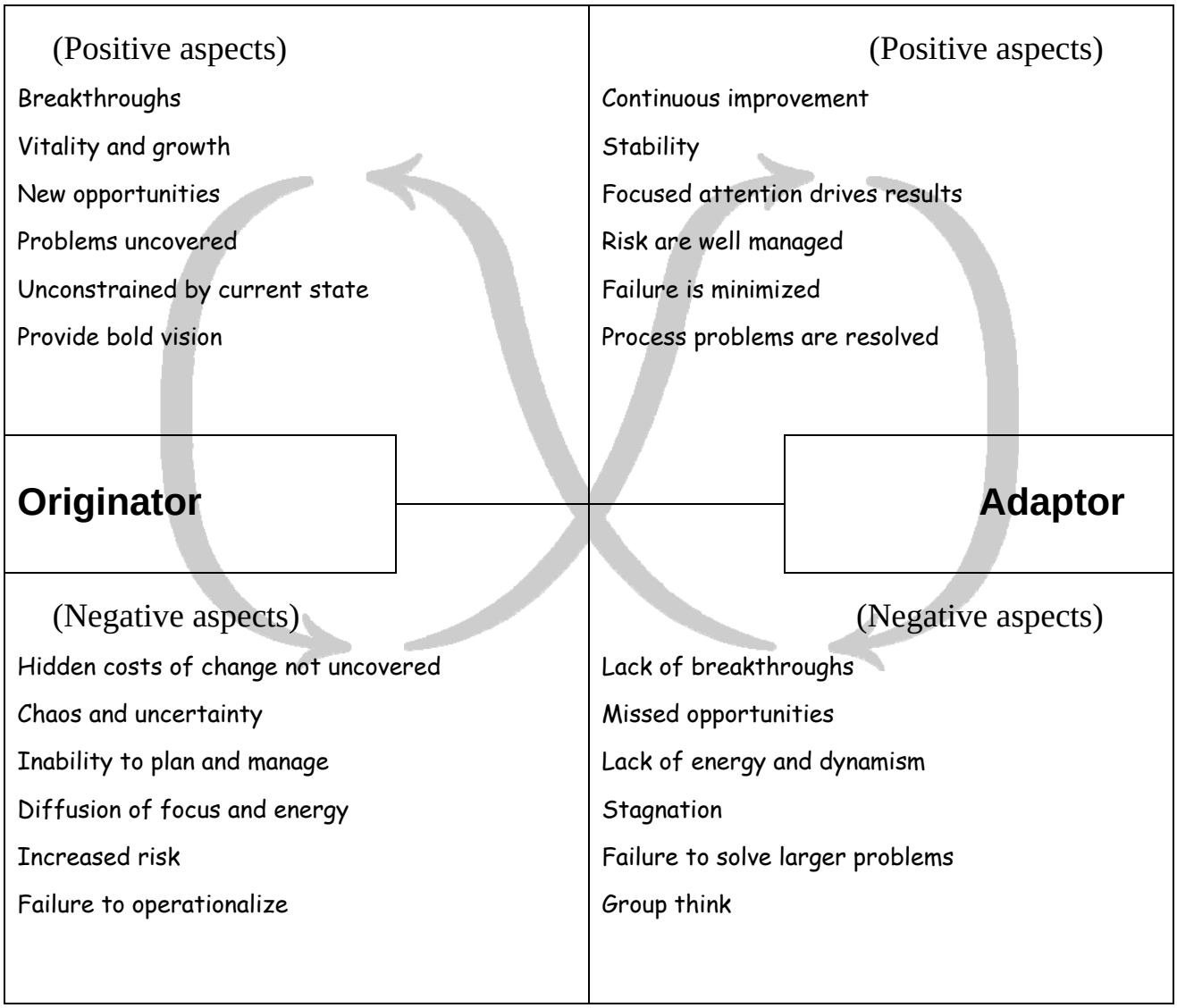

Figure 2: Originator-Adaptor polarity

As long as organizations continue to think in terms of either/or instead of both/and, this cycle pervades. Recognizing that a culture of innovation requires both "large" and "small" innovation, and therefore both thinking styles, helps generate the healthy tension required to manage the polarity.

This framework (polarity map) shows that both Originators and Adaptors can drive meaningful innovation. Neither thinking style is preferable. In fact, a balance of both styles is required for organizational health. Dr. Phil Samuel, CIO of Breakthrough Management Group states, "…a team composed of both adaptors and <originators> is the most effective—as long as they understand how to work together and respect each other's differences" (Samuel, 2007:1). Samuel asserts that innovation is usually the result of managing paradoxes and polarities—dynamic thinking on the part of Originators and risk-minimizing thinking on the part of Adaptors (Samuel, 2007:1).

Lessons for RIT

For faculty and staff at RIT, learning to think about innovation in terms of incremental as well as break-through improvements will help us recognize the conditions that lead to innovation so that we encourage it among ourselves and with our students. Learning to bridge the differences inherent in Adaptor and Originator thinking styles will foster the type of collaboration necessary to cultivate innovation.

Lessons for the Originators:

Your thinking style naturally supports innovation because you tend to:

- Seek breakthroughs
- Challenge assumptions and conventional wisdom
- Remain enthusiastic in the face of uncertainty

Your style may be seen as negative because you tend to:

- Take uncalculated risks
- Focus on ideas rather than results
- Switch gears frequently
- Overlook the value of work that has already been done

Keep in mind that "…history is full of examples where success in innovation has led to unfortunate and unintended consequences…" (Andrews, 2005:1). Balance your ability to see beyond what is with evaluating the impact of new ideas. Remember, dynamic equilibrium is achieved when the rate of change in the system occurs at a rate that is proportionate to the system's ability to cope with it.

Lessons for the Adaptors

Your thinking style naturally supports innovation because you tend to:

- Build on the value of work that has already been done
- Link change to current goals and strategy
- Be thorough in testing ideas and planning for risks

Your style may be seen as negative because you tend to:

- Be unaware of organizational assumptions
- Be closed off to radical ideas
- Miss less obvious opportunities
- Be rooted in the "here and now" versus being open to the possibilities

Try applying the queries that management guru Gary Hamel suggests to adopt more of a breakthrough thinking approach: (Hamel, 2007:2)

- Is this a belief worth challenging? Is it debilitating? Does it get in the way of attributes that we'd like to strengthen?
- Is this belief universally valid? Are there counterexamples? If so, what can we learn from those cases?
- Have our choices and assumptions conspired to make this belief self-fulfilling? Is this belief true simply because we have made it true – and if so, can we imagine alternatives?

In Part 2 of the series, I will examine strategies for building a culture of innovation. Part 3 will explore strategies to drive student innovation.

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